

chapter, as an optional ingredient for flavor development in the manufacture of cheddar cheese, in accordance with §133.113 of this chapter, and in the preparation of protein hydrolysates.

(2) The ingredient is used at levels not to exceed current good manufacturing practice.

[60 FR 54193, Oct. 20, 1995]

PART 186—INDIRECT FOOD SUBSTANCES AFFIRMED AS GENERALLY RECOGNIZED AS SAFE

Subpart A—General Provisions

Sec.

186.1 Substances added indirectly to human food affirmed as generally recognized as safe (GRAS).

Subpart B—Listing of Specific Substances Affirmed as GRAS

186.1093	Sulfamic acid.
186.1256	Clay (kaolin).
186.1275	Dextrans.
186.1300	Ferric oxide.
186.1316	Formic acid.
186.1374	Iron oxides.
186.1551	Hydrogenated fish oil.
186.1555	Japan wax.
186.1557	Tall oil.
186.1673	Pulp.
186.1750	Sodium chlorite.
186.1756	Sodium formate.
186.1770	Sodium oleate.
186.1771	Sodium palmitate.
186.1797	Sodium sulfate.
186.1839	Sorbose.

AUTHORITY: 21 U.S.C. 321, 342, 348, 371.

SOURCE: 42 FR 14658, Mar. 15, 1977, unless otherwise noted.

Subpart A—General Provisions

§186.1 Substances added indirectly to human food affirmed as generally recognized as safe (GRAS).

(a) The indirect human food ingredients listed in this part have been reviewed by the Food and Drug Administration and determined to be generally recognized as safe (GRAS) for the purposes and under the conditions prescribed, providing they comply with the purity specifications listed in this part or, in the absence of purity specifications, are of a purity suitable for their intended use in accordance with §170.30(h)(1) of this chapter. Certain in-

gredients in this part may also be used in food-contact surfaces in accordance with parts 174, 175, 176, 177, 178 or §179.45 of this chapter. Ingredients affirmed as GRAS for direct use in part 184 of this chapter are also GRAS as indirect human food ingredients in accordance with §184.1(a) of this chapter.

(b) The regulations in this part do not authorize direct addition of any food ingredient to a food. They authorize only the use of these ingredients as indirect ingredients of food, through migration from their immediate wrapper, container, or other food-contact surface. Any ingredient affirmed as GRAS in this part shall be used in accordance with current good manufacturing practice. For the purpose of this part, current good manufacturing practice includes the requirements that an indirect human food ingredient be of a purity suitable for its intended use, and that it be used at a level no higher than reasonably required to achieve its intended technical effect in the food-contact article.

(1) If the ingredient is affirmed as GRAS with no limitations on its conditions of use other than current good manufacturing practice, it shall be regarded as GRAS if its conditions of use are consistent with the requirements of paragraphs (b), (c), and (d) of this section. When the Food and Drug Administration (FDA) determines that it is appropriate, the agency will describe one or more current good manufacturing practice conditions of use in the regulation that affirms the GRAS status of the indirect ingredient. For example, when the safety of an ingredient has been evaluated on the basis of limited conditions of use, the agency will describe in the regulation that affirms the GRAS status of the indirect ingredient, one or more of these limited conditions of use, which may include the category of food-contact surface(s), technical effect(s) or functional use(s) of the indirect ingredient, and the level(s) of use. If the ingredient is used under conditions that are significantly different from those described in the regulation, such use of a substance may not be GRAS. In such a case, a manufacturer may not rely on the regulation as authorizing that use but shall independently establish that the

use is GRAS or shall use the ingredient in accordance with a food additive regulation. Persons seeking FDA approval of an independent determination that a use of an ingredient is GRAS may submit a GRAS petition in accordance with § 170.35 of this chapter.

(2) If the ingredient is affirmed as GRAS with specific limitation(s), it shall be used in food-contact surfaces only within such limitation(s), including the category of food-contact surface(s), the functional use(s) of the ingredient, and the level(s) of use. Any use of such an ingredient not in full compliance with each such established limitation shall require a food additive regulation.

(3) If the ingredient is affirmed as GRAS for a specific use, prior to general evaluation of use of the ingredient, other uses may also be GRAS.

(c) The listing of a food ingredient in this part does not authorize the use of such substance for the purpose of adding the ingredient to the food through extraction from the food-contact surface.

(d) The listing of a food ingredient in this part does not authorize the use of such substance in a manner that may lead to deception to the consumer or to any other violation of the Federal Food, Drug, and Cosmetic Act (the Act).

(e) If the Commissioner of Food and Drugs is aware of any prior sanction for use of an ingredient under conditions different from those proposed to be affirmed as GRAS, he will concurrently propose a separate regulation covering such use of the ingredient under part 181 of this chapter. If the Commissioner is unaware of any such applicable prior sanction, the proposed regulation will so state and will require any person who intends to assert or rely on such sanction to submit proof of its existence. Any regulation promulgated pursuant to this section constitutes a determination that excluded uses would result in adulteration of the food in violation of section 402 of the Act, and the failure of any person to come forward with proof of such an applicable prior sanction in response to the proposal will constitute a waiver of the right to assert or rely on such sanction at any later time. The

notice will also constitute a proposal to establish a regulation under part 181 of this chapter, incorporating the same provisions, in the event that such a regulation is determined to be appropriate as a result of submission of proof of such an applicable prior sanction in response to the proposal.

[42 FR 14658, Mar. 15, 1977, as amended at 48 FR 48457, 48459, Oct. 19, 1983]

Subpart B—Listing of Specific Substances Affirmed as GRAS

§ 186.1093 Sulfamic acid.

(a) Sulfamic acid ($\text{H}_3\text{NO}_3\text{S}$, CAS Reg. No. 5329-14-6) is a white crystalline solid manufactured from urea, sulfur trioxide, and sulfuric acid. It is soluble and highly ionized in water.

(b) In accordance with § 186.1(b)(1), the ingredient is used as an indirect food ingredient with no limitations other than current good manufacturing practice. The affirmation of this ingredient as generally recognized as safe (GRAS) as an indirect human food ingredient is based upon the current good manufacturing practice of using this ingredient in the manufacture of paper and paperboard that contact food.

(c) Prior sanctions for this ingredient different from the uses established in this section do not exist or have been waived.

[47 FR 29954, July 9, 1982]

§ 186.1256 Clay (kaolin).

(a) Clay (kaolin) $\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot n\text{H}_2\text{O}$, Cas Reg. No. 1332-58-7) consists of hydrated aluminum silicate. The commercial products of clay (kaolin) contain varying quantities of alkalies and alkaline earths. Clay (kaolin) is a white to yellowish or grayish fine powder. There are at least three different minerals, kaolinite, dickite, and nacrite, classified as kaolin. Kaolinite or china clay is whiter, less contaminated with extraneous minerals, and less plastic in water.

(b) In accordance with § 186.1(b)(1), the ingredient is used as an indirect human food ingredient with no limitation other than current good manufacturing practice. The affirmation of this ingredient as generally recognized as safe (GRAS) as an indirect human food

ingredient is based upon the following current good manufacturing practice conditions of use:

(1) The ingredient is used in the manufacture of paper and paperboard that contact food.

(2) The ingredient is used at levels not to exceed current good manufacturing practice.

(c) Prior sanctions for this ingredient different from the uses established in this regulation do not exist or have been waived.

[47 FR 43367, Oct. 1, 1982]

§ 186.1275 Dextrans.

(a) Dextrans (CAS Reg. No. 9004-54-0) are high molecular weight polysaccharides produced by bacterial fermentation of sucrose. Commercially available dextrans are synthesized from sucrose by *Leuconostoc mesenteroides* strain NRRL B-512(F). Partial depolymerization and purification of the fermented mixture shall produce a product that is free of viable microorganisms.

(b) The ingredient is used or intended for use as a constituent of food-contact surfaces.

(c) The ingredient is used at levels not to exceed good manufacturing practice.

(d) Prior sanctions for this ingredient different from the uses established in this section do not exist or have been waived.

[43 FR 29288, July 7, 1978, as amended at 48 FR 48457, Oct. 19, 1983]

§ 186.1300 Ferric oxide.

(a) Ferric oxide (iron (III) oxide, Fe_2O_3 , CAS Reg. No. 1309-37-1) occurs naturally as the mineral hematite. It may be prepared synthetically by heating brown iron hydroxide oxide. The product is red-brown to black trigonal crystals.

(b) In accordance with § 186.1(b)(1), the ingredient is used as an indirect human food ingredient with no limitation other than current good manufacturing practice. The affirmation of this ingredient as generally recognized as safe (GRAS) as an indirect human food ingredient is based upon the following current good manufacturing practice conditions of use:

(1) The ingredient is used as a constituent of paper and paperboard used for food packaging.

(2) The ingredient is used at levels not to exceed current good manufacturing practice.

(c) Prior sanctions for this ingredient different from the uses established in this section do not exist or have been waived.

[53 FR 16867, May 12, 1988; 53 FR 20939, June 7, 1988]

§ 186.1316 Formic acid.

(a) Formic acid (CH_2O_2 , CAS Reg. No. 64-18-6) is also referred to as methanoic acid or hydrogen carboxylic acid. It occurs naturally in some insects and is contained in the free acid state in a number of plants. Formic acid is prepared by the reaction of sodium formate with sulfuric acid and is isolated by distillation.

(b) Formic acid is used as a constituent of paper and paperboard used for food packaging.

(c) The ingredient is used at levels not to exceed good manufacturing practice in accordance with § 186.1(b)(1).

(d) Prior sanctions for formic acid different from the uses established in this section do not exist or have been waived.

[45 FR 22915, Apr. 4, 1980]

§ 186.1374 Iron oxides.

(a) Iron oxides (oxides of iron, CAS Reg. No. 97705-33-85) are undefined mixtures of iron (II) oxide (CAS Reg. No. 1345-25-1, black cubic crystals) and iron (III) oxide (CAS Reg. No. 1309-37-1, red-brown to black trigonal crystals).

(b) In accordance with § 186.1(b)(1), the ingredient is used as an indirect human food ingredient with no limitation other than current good manufacturing practice. The affirmation of this ingredient as generally recognized as safe (GRAS) as an indirect human food ingredient is based upon the following current good manufacturing practice conditions of use:

(1) The ingredient is used as a constituent of paper and paperboard used for food packaging.

(2) The ingredient is used at levels not to exceed current good manufacturing practice.

(c) Prior sanctions for this ingredient different from the uses established in this section do not exist or have been waived.

[53 FR 16867, May 12, 1988; 53 FR 20939, June 7, 1988]

§ 186.1551 Hydrogenated fish oil.

(a) Hydrogenated fish oil (CAS Reg. No. 91078-95-4) is a class of oils produced by partial hydrogenation of oils expressed from fish, primarily menhaden, and secondarily herring or tuna. Hydrogenation of fish oils uses catalysts composed of either elemental nickel, elemental copper, or a mixture of these elements. The crude hydrogenated fish oil is further processed by alkali refining, bleaching, and deodorization by steam stripping.

(b) Hydrogenation of fish oils results in a final product with a melting point greater than 32 °C as determined by Section Cc 1-25, Official and Tentative Methods of the American Oil Chemists' Society method (reapproved 1973) or equivalent. The product has an approximate fatty acid composition of 30 to 45 percent saturated fatty acids, 40 to 55 percent monoenoic fatty acids, 7 to 15 percent dienoic fatty acids, 3 to 10 percent trienoic fatty acids, and less than 2 percent tetraenoic or higher polyenoic fatty acids. The approximate percentages of total fatty acids by carbon chain length are 15 to 30 percent each of C₁₆, C₁₈, C₂₀, C₂₂, less than 10 percent C₁₄ or lower carbon chain length, and less than 1 percent C₂₄ or higher carbon chain length fatty acids.

(c) The ingredient is used as a constituent of cotton and cotton fabrics used for dry food packaging.

(d) The ingredient is used at levels not to exceed good manufacturing practice in accordance with § 186.1(b)(1).

(e) Prior sanctions for this ingredient different from the use established in this section do not exist or have been waived.

[44 FR 28323, May 15, 1979, as amended at 49 FR 5614, Feb. 14, 1984; 58 FR 17099, Apr. 1, 1993]

§ 186.1555 Japan wax.

(a) Japan wax (CAS Reg. No. 8001-39-6), also known as Japan tallow or sumac wax, is a pale yellow vegetable

tallow, containing glycerides of the C₁₉-C₂₃ dibasic acids and a high content of tripalmitin. It is prepared from the mesocarp by hot pressing of immature fruits of the oriental sumac, *Rhus succedanea* (Japan, Taiwan, and Indo-China), *R. vernicifera* (Japan), and *R. trichocarpa* (China, Indo-China, India, and Japan). Japan wax is soluble in hot alcohol, benzene, and naphtha, and insoluble in water and in cold alcohol.

(b) In accordance with paragraph (b)(1) of this section, the ingredient is used as an indirect human food ingredient with no limitation other than current good manufacturing practice. The affirmation of this ingredient as generally recognized as safe (GRAS) as an indirect human food ingredient is based on the following current good manufacturing practice conditions of use:

(1) The ingredient is used as a constituent of cotton and cotton fabrics used for dry food packaging.

(2) The ingredient is used at levels not to exceed current good manufacturing practice.

(c) Prior sanctions for this ingredient different from the uses established in this section do not exist or have been waived.

[60 FR 62208, Dec. 5, 1995]

§ 186.1557 Tall oil.

(a) Tall oil (CAS Reg. No. 8002-26-4) is essentially the sap of the pine tree. It is obtained commercially from the waste liquors of pinewood pulp mills and consists mainly of tall oil resin acids and tall oil fatty acids.

(b) In accordance with § 186.1(b)(1), the ingredient is used as an indirect human food ingredient with no limitation other than current good manufacturing practice. The affirmation of this ingredient as generally recognized as safe (GRAS) as an indirect human food ingredient is based on the following current good manufacturing practice conditions of use:

(1) The ingredient is used as a constituent of cotton and cotton fabrics used for dry food packaging.

(2) The ingredient is used at levels not to exceed current good manufacturing practice.

(c) Prior sanctions for this ingredient different from the uses established in

this section, or from those listed in part 181 of this chapter, do not exist or have been waived.

[51 FR 16830, May 7, 1986]

§ 186.1673 Pulp.

(a) Pulp is the soft, spongy pith inside the stem of a plant such as wood, straw, sugarcane, or other natural plant sources.

(b) The ingredient is used or intended for use as a constituent of food packaging containers.

(c) The ingredient is used in paper and paperboard made by conventional paper-making processes at levels not to exceed good manufacturing practice.

(d) Prior sanctions for this ingredient different from the uses established in this section do not exist or have been waived.

§ 186.1750 Sodium chlorite.

(a) Sodium chlorite (NaClO_2 , CAS Reg. No. 7758-19-2) exists as slightly hygroscopic white crystals or flakes. It is manufactured by passing chlorine dioxide into a solution of sodium hydroxide and hydrogen peroxide.

(b) The ingredient is used at levels from 125 to 250 parts per million as a slimicide in the manufacture of paper and paperboard that contact food.

[45 FR 16470, Mar. 14, 1980]

§ 186.1756 Sodium formate.

(a) Sodium formate (CHNaO_2 , CAS Reg. No. 141-53-7) is the sodium salt of formic acid. It is produced by the reaction of carbon monoxide with sodium hydroxide.

(b) The ingredient is used as a constituent of paper and paperboard used for food packaging.

(c) The ingredient is used at levels not to exceed good manufacturing practice in accordance with § 186.1(b)(1).

(d) Prior sanctions for sodium formate different from the uses established in this section do not exist or have been waived.

[45 FR 22915, Apr. 4, 1980]

§ 186.1770 Sodium oleate.

(a) Sodium oleate ($\text{C}_{18}\text{H}_{33}\text{O}_2\text{Na}$, CAS Reg. No. 143-19-1) is the sodium salt of oleic acid (*cis*-9-octadecenoic acid). It exists as a white to yellowish powder

with a slight tallow-like odor. Commercially, sodium oleate is made by mixing and heating flaked sodium hydroxide and oleic acid.

(b) In accordance with § 186.1(b)(1), the ingredient is used as a constituent of paper and paperboard for food packaging and as a component of lubricants with incidental food contact in accordance with § 178.3570 of this chapter, with no limitation other than current good manufacturing practice.

(c) Prior sanctions for this ingredient different from the uses established in this section do not exist or have been waived.

[51 FR 39372, Oct. 28, 1986]

§ 186.1771 Sodium palmitate.

(a) Sodium palmitate ($\text{C}_{16}\text{H}_{31}\text{O}_2\text{Na}$, CAS Reg. No. 408-35-5) is the sodium salt of palmitic acid (hexadecanoic acid). It exists as a white to yellow powder. Commercially, sodium palmitate is made by mixing and heating flaked sodium hydroxide and palmitic acid.

(b) In accordance with § 186.1(b)(1), the ingredient is used as a constituent of paper and paperboard for food packaging with no limitation other than current good manufacturing practice.

(c) Prior sanctions for this ingredient different from the uses established in this section do not exist or have been waived.

[51 FR 39372, Oct. 28, 1986]

§ 186.1797 Sodium sulfate.

(a) Sodium sulfate (Na_2SO_4 , CAS Reg. No. 7757-82-6), also known as Glauber's salt, occurs naturally and exists as colorless crystals or as a fine, white crystalline powder. It is prepared by the neutralization of sulfuric acid with sodium hydroxide.

(b) The ingredient is used as a constituent of paper and paperboard used for food packaging, and cotton and cotton fabric used for dry food packaging.

(c) The ingredient is used at levels not to exceed good manufacturing practice in accordance with § 186.1(b)(1).

(d) Prior sanctions for this ingredient different from the uses established in this section do not exist or have been waived.

[45 FR 6086, Jan. 25, 1980]

§ 186.1839 Sorbose.

(a) Sorbose (L-sorbose, sorbinose) ($C_6H_{12}O_6$, CAS Reg. No. 87–79–6) is an orthorhombic, bisphenoidal crystalline ketohexose. It was originally identified in the juice of mature berries from the mountain ash (*Sorbus aucuparia*) where it occurs as the result of microbial oxidation of sorbitol. It also occurs naturally in other plants. Sorbose can be synthesized by the catalytic hydrogenation of glucose to D-sorbitol. The resulting sorbitol can be oxidized by *Acetobacter xylinum* or by *Acetobacter suboxydans*.

(b) The ingredient is used or intended for indirect food use as a constituent of cotton, cotton fabrics, paper, and paperboard in contact with dry food.

(c) The ingredient migrates to food at levels not to exceed good manufacturing practice.

(d) Prior sanctions for this ingredient different from the uses established in this section do not exist or have been waived.

[43 FR 11698, Mar. 21, 1978, as amended at 48 FR 48457, Oct. 19, 1983]

PART 189—SUBSTANCES PROHIBITED FROM USE IN HUMAN FOOD

Subpart A—General Provisions

Sec.

189.1 Substances prohibited from use in human food.

Subpart B—Substances Generally Prohibited From Direct Addition or Use as Human Food

- 189.110 Calamus and its derivatives.
- 189.113 Cinnamyl anthranilate.
- 189.120 Cobaltous salts and its derivatives.
- 189.130 Coumarin.
- 189.135 Cyclamate and its derivatives.
- 189.140 Diethylpyrocarbonate (DEPC).
- 189.145 Dulcin.
- 189.155 Monochloroacetic acid.
- 189.165 Nordihydroguaiaretic acid (NDGA).
- 189.175 P-4000.
- 189.180 Safrole.
- 189.190 Thiourea.
- 189.191 Chlorofluorocarbon propellants.

Subpart C—Substances Prohibited From Indirect Addition to Human Food Through Food-Contact Surfaces

- 189.220 Flectol H.
- 189.240 Lead solders.
- 189.250 Mercaptoimidazoline and 2-mercaptoimidazoline.
- 189.280 4,4'-Methylenebis (2-chloroaniline).
- 189.300 Hydrogenated 4,4'-isopropylidene-diphenolphosphite ester resins.
- 189.301 Tin-coated lead foil capsules for wine bottles.

AUTHORITY: 21 U.S.C. 321, 342, 348, 371.

SOURCE: 42 FR 14659, Mar. 15, 1977, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 189 appear at 61 FR 14482, Apr. 2, 1996.

Subpart A—General Provisions

§ 189.1 Substances prohibited from use in human food.

(a) The food ingredients listed in this section have been prohibited from use in human food by the Food and Drug Administration because of a determination that they present a potential risk to the public health or have not been shown by adequate scientific data to be safe for use in human food. Use of any of these substances in violation of this section causes the food involved to be adulterated in violation of the act.

(b) This section includes only a partial list of substances prohibited from use in human food, for easy reference purposes, and is not a complete list of substances that may not lawfully be used in human food. No substance may be used in human food unless it meets all applicable requirements of the act.

(c) The Commissioner of Food and Drugs, either on his own initiative or on behalf of any interested person who has submitted a petition, may publish a proposal to establish, amend, or repeal a regulation under this section on the basis of new scientific evaluation or information. Any such petition shall include an adequate scientific basis to support the petition, pursuant to part 10 of this chapter, and will be published for comment if it contains reasonable grounds.

[42 FR 14659, Mar. 15, 1977, as amended at 54 FR 24899, June 12, 1989]